Kepercayaan Generasi Z pada Chatbot Layanan Kesehatan Mental

Generation Z's Trust in The Chatbot of Mental Health Service

Bayu Kelana[1], Rofii Asy Syaani[1], Febri Kristanto[1], Pandu Ady Winata[2]
[1]ESQ School of Management and Computer Science
[2]PT. Arga Teman Bahagia
Corresponding author: bayu@esqbs.ac.id

KATA KUNCI	generasi z, kepercayaan, kesehatan mental, Chatbot, analisis fenomologi interpretatif

ABSTRAK	Generasi Z merupakan kelompok usia yang paling banyak mengalami masalah kesehatan mental akibat pandemi COVID-19 di Indonesia. Pelayanan sistem informasi kesehatan jiwa semakin populer, hingga pelayanan pasien kewalahan. *Chatbot* muncul sebagai salah satu solusi untuk mengatasi permasalahan tersebut. Namun, percakapan dengan mereka telah menimbulkan masalah sosial seiring dengan meningkatnya penggunaan Chatbot. Penelitian ini bertujuan untuk mengidentifikasi faktor-faktor yang mempengaruhi kepercayaan generasi z terhadap *Chatbot* layanan pasien dalam aplikasi kesehatan mental di Indonesia. Dengan menggunakan metode analisis fenomenologi interpretatif, penelitian ini menganalisis data kualitatif dari observasi dan wawancara terhadap lima mahasiswa S1. Berdasarkan analisis, penelitian ini mengidentifikasi tujuh faktor yang memengaruhi kepercayaan Gen Z terhadap layanan pelanggan *Chatbot* dalam aplikasi kesehatan mental, dan tiga di antaranya merupakan temuan baru.

KEYWORDS	*generation z, trust, mental health,* Chatbot*, interpretative phenomenological analysis*

ABSTRACT	*Generation Z is the age group that has experienced the most mental health-related issues due to the COVID-19 pandemic in Indonesia. Mental health information system services have become increasingly popular, so patient services are overwhelmed. Chatbot has emerged as one of the solutions to address this problem. However, conversations with them have led to social issues alongside the growing use of Chatbots. This study aims to identify the factors influencing Generation Z's trust in patient service Chatbots within mental health applications in Indonesia. Using the Interpretative Phenomenological Analysis method, this research analyses qualitative data from observations and interviews with five undergraduate students. Based on the analysis, the study identified seven factors that influence Generation Z's trust in Chatbot customer service within mental health applications, with three being novel findings.*

INTRODUCTION

From research conducted in 1,458 samples, it was found that Indonesian people experienced psychological problems categorised as moderate, severe, and very severe, amounting to 12.4%, 26.3%, and 16%, respectively, during the COVID-19 pandemic in Indonesia (Izzatika *et al.,* 2021). The highest incidence of psychological issues was found among the age groups of 17 to 29 years old and those older than 60 years (Fauziyyah R *et al.,* 2021). Based on these age groups, the majority part of individuals experiencing psychological problems in Indonesia belong to Generation Z (Parker K *et al.,* 2020). Generation Z is a generation that has been closely connected to technology since birth (Anderson *et al.,* 2017). This aligns with the way the majority of Indonesians have been addressing mental health problems during the COVID-19 pandemic. Around 87% of Indonesians utilise applications for teleconsultation of mental health services due to their accessibility, while 63% choose them because of their affordability (Populix, 2022). Some mental health services have been overwhelmed, leading to the need for Chatbots to assist patients (Marquez C, 2023).

The interest in implementing Chatbots and related technologies in the industry experienced growth of over 160% in 2018 Goasduff L, 2019). Additionally, an Accenture survey revealed that 57% of organisations believe using Chatbots for conversations can provide significant benefits with minimal effort (Srinivasan K *et al.,* 2018). Although Chatbot development advances rapidly, conversations with artificial agents pose social problems that exceed current technological limitations (Rapp A *et al.,* 2021). Chatbots can evoke frustration, as humans feel misunderstood and perceive biases in the Chatbot's language (Grudin J and Jacques R, 2019). Therefore, research from a human perspective when interacting with Chatbots is considered necessary. By examining user experiences, studies of this nature uncover many expectations and feelings of humans when encountering Chatbots, particularly in natural written language communication.

Many studies on human interaction with text-based Chatbots extensively explore how trust can influence user experience. Findings related to users' trust in Chatbots are obtained mainly from studies by Zhou *et al.*, (2019) Folstad & Skjuve, (2019) and Yen & Chiang (2021). Firstly, the personality of a Chatbot can influence users' trust in the Chatbot in customer service (Zhou MX *et al.,* 2019). Secondly, Folstad & Skjuve (2019) found three factors affecting users' trust in Chatbots: service efficiency, security and privacy, and the ability to interpret user requests accurately. Thirdly, in contrast to the two other researchers, Yen & Chiang (2021) discovered that the informativeness factor of a Chatbot influences users' trust in the Chatbot. Besides, studies on human-Chatbot interactions have already been conducted in various fields, including customer service, education, healthcare, online commerce, conversation, emotional and social support, recommendation systems, productivity, and data retrieval (Rapp A *et al.,* 2021).

While some studies have examined those aspects in various fields above, some limitations present opportunities for further research, such as the need for more focus on the design and development of the theories that explain the uniqueness of human-Chatbot interaction (Rapp A *et al.,* 2021). Based on the background and research problems mentioned above, the study aims to understand the essential factors of conversational design to construct the trust of Generation Z when interacting with Chatbots in mental health services.

METHODOLOGY

This study is part of the conversation design development for a mental health Chatbot using a two-iteration experimental approach. Every iteration consists of conversation design development and design testing. The data obtained from design testing includes both qualitative and quantitative aspects. Quantitative data were obtained from the System Usability Testing survey, while qualitative data were collected from usability testing and interviews. Through observation conducted during usability testing and then interviews in each iteration, qualitative data were obtained from five undergraduate students representing five different campuses, chosen randomly. The participants consisted of two females and three males. Testing with five participants allows for identifying usability issues nearly as extensive as testing with a more significant number of participants (Nielsen J, 2000)**.** According to the processed data type, the research is a qualitative study analysed using the Interpretative Phenomenological Analysis (IPA) technique. Qualitative research with IPA is used to study how a person has experienced a situation (Linder J and Arvola M, 2017), using a Chatbot of mental health services. With this technique, the analysis has been done in four steps: reading, re-reading, and commenting process, themes development process, relation finding between themes process, and insights visualisation process. The conversation between the participant and the researcher is transcribed in the first step of the analysis. The transcriptions are then read repeatedly to understand and relive the experience of the conversation with the participant. After reviewing the transcriptions, essential elements are commented upon. The aim is to comprehend the meaning, complexity, and significance of what the participant has expressed (Linder J and Arvola M,

2017). Secondly, once all the relevant comments have been made, these are condensed into concise themes. The aim is to capture the essence of the comments. It is crucial to ensure that the themes maintain a clear connection with the corresponding parts of the transcriptions. This process utilised a combined bottom-up and top-down approach. The third step involved exploring the relationship between themes. Similar or related themes that emerge have been combined, while others have been removed if deemed irrelevant. This process aims to refine and consolidate the themes, ensuring that they capture the essential aspects of the data. The final step involved visualising the themes obtained from the verbatim quotes in the transcriptions.

RESULTS AND DISCUSSION

This section presents the analysis and discussion of the results obtained from the study. Data testing and inter results of two Chatbot conversation design development phases. The findings from each iteration were then compiled and discussed in the analysis. The observation in the first iteration yielded no feedback regarding all the tested features. The comments from all participants were generally related to completion responses or questions regarding the testing guidelines. The observation from the first iteration of the Chatbot conversation design did not provide in-depth findings regarding the trust factor. The findings in this iteration have been obtained from interviews. The result of the theme's development of interview data by the IPA technique can be seen in Table 1. The observation from the second trial also did not provide in-depth findings regarding the trust factor. The conclusions of this iteration have been obtained only from interviews. The result of the theme's development of interview data by the IPA technique can be seen in Table 2.

Table 1. Themes in The First Iteration

Participant	Theme	Number
Bottom-up analysis		
A, B, C	The informativeness	3
A, B, D	The similarity of language style with human	3
B	The number of users	1
C, D	Security, and privacy	1
C	The use of emoticons.	2
D	Efficiency of service	1
E	Security	1
E	Accuracy of interpreting user request	1
E	Closeness to the Chatbot	1
Top-down analysis		
A, B, C, E	The informativeness	4
A, B, D	Personal identity	3
D	Efficiency of service	1
D, E	Accuracy of interpreting user request	2

Table 2. Themes in The Second Iteration

Participant	Theme	Number
Bottom-up analysis		
A	The mention of the user's name*	1
A, B, C, D	The informativeness	4
A, B	Efficiency of service	1
A	Accuracy of interpreting user request	1
D	The similarity of language style with human	1
E	Security	1
Top-down analysis		
A	Efficiency of service	1
A	Accuracy of interpreting user request	1
A, B, C, D	The informativeness	4
B	Efficiency of service	1
D	The similarity of personality with human	1
E	Security	1
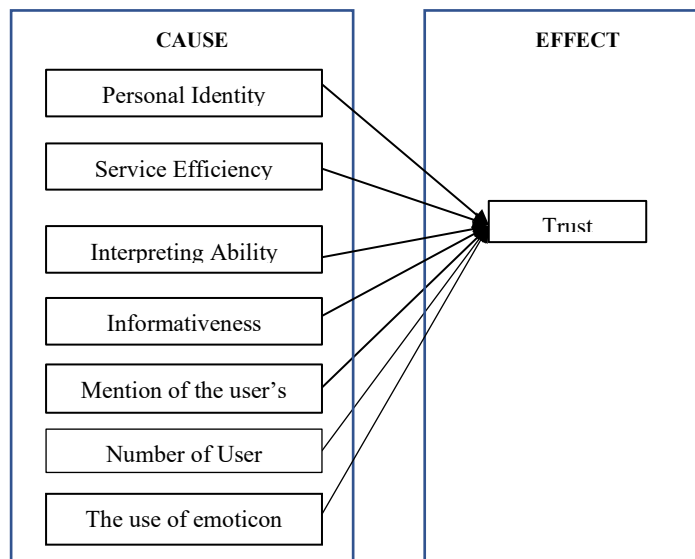
Figure 1. New Research Model

The study yielded several findings based on analysing themes obtained from bottom-up and top-down analysis in two iterations. Firstly, out of the five factors in the study proposition, one factor did not influence the participants' trust in the Chatbot of mental health service. The factor is security, as identified by Folstad & Skjuve. Security only becomes a concern for Generation Z when discussing matters that require high privacy. The conversation content in inpatient services has not been considered highly private by participants. Meanwhile, the study's findings support Zhou et al.'s (2019) and Yen & Chiang's (2021) studies.

Secondly, the study found three new factors influencing participants's trust: Chatbot nicknames, the number of users, and emoticons. Thirdly, the study found three factors that have the most vital relationship with participants in the Chatbot of mental health service: informativeness, strength of personal identity, and service efficiency. The new research model obtained in the study can be seen in Figure 1.

CONCLUSION

Two conclusions can be drawn based on the study's findings. Firstly, there are differences between the study's conclusions compared to previous research. Secondly, new findings have emerged from the study. This may be attributed to the differences in Chatbot domains between the study and previous research.

Meanwhile, the study has three limitations. From these limitations, some suggestions can be considered for future research. Firstly, all participants in the study only came from undergraduate students, which means the result may not represent others. Therefore, future research can be conducted with different generations and occupations to obtain more varied results. Besides, secondly, the findings cannot be generalized. A more significant number of respondents with quantitative research can be conducted for future research. Thirdly, most participants did not express their feelings maximally when they did some tasks in usability testing. The maximal use of the think-aloud protocol in usability testing will drive the observation to obtain more insights.

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